

# GLOBAL POWER AND BRAZILIAN NUCLEAR DECISIONS

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## ABSTRACT

Brazilian society declares no intention to development a nuclear artifact. This is on its Constitution. The submarine of nuclear propulsion may be used as a weapon of defense and, therefore, has a peaceful objective. Nationalism must be applied only to benefit the society. Nationalist attention has always been devoted, at various occasions, to the Brazilian nuclear sector. However, since Brazilian society has many needs and the Brazilian government always had numerous energy options, this sector has not been developed as it could be. Other successful applications of nuclear technology, besides electric generation, are not considered here. At present, the country is experiencing a moment of harassment of liberal forces. It is difficult to know if the population understands what is going on, due to the traditional media control. This media belongs to the capital. The rise and the fall of the nationalist strand in a country follow a global tendency and also depend of actions of the international capital. In nationalist periods, more decisions with positive social impact are taken. Therefore, sovereignty is necessary to increase the benefits to society. Unfortunately, the Brazilians deceived by the companies of mass communication and corrupt political leaderships allow the country to be dominated. Even the armed forces had their projects paralyzed. The nuclear sector, as all other, suffers with the low budget and the future is difficult to predict.

## 1. INTERSECTION OF THE NUCLEAR SECTOR AND NATIONALISM

Nationalist attention has always been dedicated to the Brazilian nuclear sector at various times. However, because Brazil is a country with many needs and has so many energy options, the nuclear sector has not been completely developed, which would be beneficial for society itself. Nevertheless, what has been done represents a reasonable advance for a late-developing country.

The Brazilian position about nuclear issues in international forums has always been an extreme commitment to our society. The most characteristic event of the rectitude of a representative of ours occurred with Admiral Alvaro Alberto when the US government proposed that the world reserves of thorium and uranium be “internationalized”, the called Baruch Plan. In short, this plan tried to install the control of these reserves by an international agency which would suffer strong influence of the US government [1] [2] [3].

On this occasion, the Admiral voted against the proposal, which he called "the United States attempt to expropriate world reserves" and proposed the Principle of Specific Compensation, which meant that no trade transaction with strategic minerals should be made with currency payment, but through the provision of technology. Underdeveloped countries, usually reserve owners, would provide the desired ore and would receive technologies.

Admiral Álvaro Alberto was also the responsible for the purchase of three centrifuges for uranium enrichment in post-war Germany to bring them to Brazil. This operation did not result in success. However, it proves that he was conscious, in 1954, about the importance of this technology for Brazil.

In 1962, the creation of the Nuclear Engineering Institute (IEN), together with the construction of the Argonauta research reactor, completed in 1965 with a 93% nationalization index, represented a reaction of Brazil to the United States program "Atoms for Peace", which planned to create dependence of developing countries on nuclear technology [5] [6].

Taking a leap in History of a dozen years, under General Geisel's presidency, in 1975, Brazil closed a Nuclear Agreement with Germany, which was very ambitious, but was concerned about the transfer of nuclear technology to Brazil [4]. As a consequence of this transfer, for many years, Brazil is manufacturing the fuel elements for the Angra I and Angra II plants. During the construction of Angra II, technologies were absorbed and some components were manufactured at NUCLEP. Unfortunately, knowledge is being lost due to lack of continuity in the construction of the plants.

The peak of the demonstration of wanting the best for the Brazilian society occurred with the constitution of the Parallel Nuclear Program. The ultimate goal has always been to endow the country with the powerful defense weapon, the submarine with nuclear propulsion. It is known that no country in the world sells this submarine. Thus, Brazil is obliged to develop the necessary technologies to possess it, being the main ones, the uranium enrichment and the construction of the compact reactor. The submarine needs other technologies to be developed, but, related to nuclear energy and with a high degree of complexity, there are only these two.

With respect to the development of uranium enrichment, there was great success, thanks to the Navy and IPEN team, coordinated by Vice Admiral Othon Pinheiro da Silva. The ultracentrifuges developed by this team performed above the best available at the time. However, the greatest value of the team was not their technical culture, which was great, nor their inventiveness. It was, above all, their commitment to Brazilian society. All team members struggled to achieve this great conquest.

## **2. MOVEMENT OF INTERNATIONAL CAPITAL**

A new wave of liberalism in the economy emerged a few years ago and persists to these days in most countries of the world. As it happens sometimes, the interests of capital collide with the interests of society. Also, at present, there is the prevalence of the interests of international capital over the ones of regional capitals in peripheral countries. On the other hand, in relation to privatizations, the minimum state, the withdrawal of customs barriers and the free flow of capital and so on, these capitals show unity of position.

Macron in France, Macri in Argentina, Kuczynski in Peru, Mario Monti in Italy, Peña Nieto in Mexico, Temer in Brazil and others [18] have in common that they have been driven to power with strong support from the capital and the media. Generally speaking, the capital wants in return of its support the transfer of resources related to the social achievements in years of workers' struggles to increase the profitability of capital. Also, in peripheral countries, the foreign capital wants to receive natural resources, productive facilities and the opening of the domestic market.

The changes promised by these elected, stated as beneficial to society, with some variations from country to country, consist of the reform of social security and labor legislation, greater restriction in the granting of unemployment insurance, business conditions more attractive to capital owners, privatizations, reduction of State size, responsible public accounts, reduction of taxes, free market and globalization.

As already mentioned, capital has managed to win elections around the world, with a great support of the media, which is its instrument of power. Media channels committed to society are very few everywhere. In these circumstances, the freedom of the press has been in practice that of the capital to manipulate the information. In the battle of information, proponents of neoliberal change argue that it brings greater efficiency, not saying that this efficiency is related to the profit generation and, unfortunately, not to the social welfare obtained.

However, not all is lost. There are signs that the future may be different, as new alternatives emerge [18]. In Spain, the "Podemos" on the left is a hope. The "France Insoumise" is another reason for joy. The new leader of the English Labor Party, Jeremy Corbyn, beats recent leaders of the same Party. In Mexico, Lopez Obrador of the National Regeneration Movement may come to power and reverse the current anti-national oil policy. Even in the United States, right wing paradise, the candidacy of Bernie Sanders, in the Democratic primaries, brought the hope of an outcome always considered impossible.

But the right has the primacy in the Western world. In Brazil, seems that it has badly chosen its representative. For obvious reasons, Temer will not have the political strength to approve all "reforms", which was the task that he received. Today, it is very difficult to predict the future of Brazil and say who will win the 2018 elections, if the right or the left. Even to say how a conservative or progressive government will decide about nuclear issues, it is not easy.

In the political world, where there is little nexus for the common citizens, thanks to a lot of dissimulation, there is a great disinterest among them. It is even difficult to predict whether the population's complacent posture will continue or whether this population will be discussing and analyzing with exemption the situations.

At the moment, Brazil is experiencing the siege of neoliberal forces. Sometimes, appears that the population begins to sketch some reaction, in spite of all the media control exerted on her. There is a heavy information control that not even the military with their censors did. Today, if it was not the social networks, which seek to raise public awareness, the population would not know what is happening and, in the next election, would vote against their own interests.

The relations between countries and the development of each one explain, in part, the rise and fall of the nationalist dimension in some of them. It is obvious that when the country is in a sovereign phase, neoliberal decisions do not exist. Thus, in the nationalist phase, more decisions of social interest are taken. Therefore, one should seek to increase the degree of sovereignty for the enjoyment of society. In the present phase, there is extreme invasion of the colonized countries by their colonizers in order to increase the degree of domination for their usufruct. Countries with a high degree of sovereignty protect their markets, their strategic sectors of industries and services, their universities, their sources of technology and their culture.

We always were part of the zone of influence of the United States, but we had presidents with more concern with sovereignty, like Vargas, Goulart and Geisel. During the Lula and Dilma governments, Brazil showed some "rebellions" in the quest for a greater degree of sovereignty, such as when it joined the BRICS countries, by participating in the creation of a BRICS-linked development bank, in forming UNASUR, with the agreement to all transactions of BRICS countries be into their currencies, by buying technology of the fighter airplane and the conventional submarine, while seeking to develop the nuclear submarine, by approving the pre-salt sharing contract, by supporting local purchases, and so on. All these attitudes were not to the liking of international capital, but they were in the interest of Brazilian society. Today, Brazil's degree of sovereignty is low. It can be said that Brazil is currently a success of domination by capitals and foreign countries.

### **3. MEDIA DOMINATION**

Noam Chomsky well describes the process of media domination. It is important not forget that this media belongs to capital. According to him, there are principles, which must be followed by the media to achieve the domination of public comprehension of events. This media does not report necessarily the reality. It can also create supposed facts that satisfy the interests of the dominators. The process of domination uses knowledge of neurology, applied psychology and others, for the control of the preferences and the opinions of the population by the elite.

Some of the principles described by Chomsky [16] are the following: (1) fake information and even some reliable information should be inserted in the midst of the entertainment programming of TV; (2) one can lie and not show facts at will as long as the version that goes to the public is feasible; (3) problems can be created for desired positions to be imposed; (4) an unpopular measure presented in parts facilitates its acceptance; (5) the time lapse between the approval by Congress of an unpopular measure and its beginning of application must be large; (6) communication with the general public should occur as if it were addressed to the mentally weak because, acting in this way, a critical reaction is not stimulated; (7) the quality of education given to the less favored social class should be as superficial as possible, so that there will be a great distance between the awareness of this class and that of the elite; and (8) the most inhuman of all, which is to make the individual believe that he alone is to blame for his own misfortune, because of his lack of intelligence, incapacity and insufficient efforts.

Long before Chomsky, in the first half of the last century, Edward Bernays [15], called as the "father of public relations", was already aware of the manipulation of the masses, so much that he said: "Those who manipulate this invisible mechanism of society constitute a government. In almost every act of our daily lives, be it in the sphere of politics or business, in our social conduct or our ethical thinking, we are dominated by a relatively small number of people, who understand the mental processes and social patterns of the masses. They pull the wires that control the public mind."

In this context of domination of societies, armed forces are replaced by efficient entertainment and communication companies. One does not disembark anymore in beaches to dominate a country. Just have a competent communication company and start to spread many misconceptions, such as: (1) Brazil can develop thanks to the massive inflow of foreign capital into the country; (2) the best index to measure a country's growth is GDP (nothing being said about the difference between economic and social growth and the HDI); (3) there

is no industrial sector that requires the existence of state-owned companies; (4) in sectors with a predominance of private companies, regulatory agencies will avoid agreements that cause damage to society; (5) Brazil can have its physical security guaranteed by the United States, not needing to spend on costly military projects; (6) for more than 150 years, Brazil has not been in conflict with any of its neighbors, which corroborates the thesis that it does not need to have strong armed forces; (7) import barriers, also known as market reserves, only serve to create technological backwardness and inefficient production; (8) in order to attract foreign capital, important for our development, we should minimize taxes in general on productive activity. Obviously, if the society adheres to these thoughts, the country ceases to be sovereign.

#### **4. CONCLUSIONS**

Any analysis of the future of the nuclear sector in Brazil depends on the future of the country, that is, its economy, its political organization, its international relationships and the degree of awareness of its society. What is left of 2017 and 2018 will be a bustling time from the political point of view, which will have repercussions for some time in all areas. As it happens with any prognosis, it will also contain some degree of subjectivity.

Beside these facts, the positioning of the country, after January of 2019, will be a consequence of the new president and the new Congress, both elected at the end of 2018. Since capital will probably continue financing its candidates, media will stay manipulating information and people will remain understanding very few of what is going on, things will not change too much in the political world. Society needs a break through as an educational revolution, a great participation of workers in unions, a media regulation or an ethical movement in the society, which will have repercussions in next election.

At this point, one must stop, because even experts in prospective analysis have difficulty to estimate how Brazil will be in 2019. Obviously, decisions about the nuclear sector will be different for each one of the Brazilian futures. But, it is certain that there will be few State resources for the construction of a new nuclear power plant or even to complete Angra III.

Foreign companies of construction and operation of nuclear plants want to change the Constitution so that the end of the State monopoly in this sector occurs. These companies will compete with those that produce electric energy from hydropower, wind, solar, in thermals from fossil fuels etc. Certainly, foreign nuclear generation companies must have security that can generate kWh cheaper than those generated with the other sources. Other option, that does not need to modify the Constitution, is an agreement between the State owned company Eletronuclear and Chinese or Russian firms to construct and operate nuclear power plants, being Eletronuclear the main contractor.

Since there are, in nowadays, two great groups of military and political power in the world [14], the United States plus OTAN in one side, and the Shanghai group in the other, a new “Cold War” already started. In periods when there is a division of the world power, non-allied countries may gain some advantages.

Only one of the applications of nuclear energy is being analyzed, but it is the one that receives the largest volumes of resources. There are applications in Health, Industry, Agriculture and others, that are being successful as well. The technology for using nuclear

energy in the propulsion of submarines is being developed in Brazil not at the desirable speed because there is a lack of resources as well, in total disagreement with the country's defense needs.

Unfortunately, a part of the investments made in the past, in order that Brazil would dominate the nuclear generation technology, was thrown away. The greatest sadness of underdeveloped countries is not the lack of resources to implement their various projects. The greatest sadness is the fact that, since resources are scarce, a part of these resources is being completely lost. To overcome this difficulty, it would be opportune to draw up a National Project, together with society, to be a guideline for the future governments. A nuclear program, as well as a defense program, must be programs that belong to the Brazilian State and not to the government in course. This means that, if the construction of a nuclear power plant is decided, for example, in a progressive government, that was followed by a conservative one, this last government had to continue the construction.

Due to media domination, today there are some misconceptions about Sovereignty, such as "geopolitics is a military subject" or "buying and developing weapons, even if they are only for deterrence, it means to lose money" or "foreign companies acting in our country bring the same impacts as genuinely national companies". It is missing to explain to the people that these misconceptions were implanted on them purposely.

It is amazing that, thanks to the large number of foreign companies established in the country, the generous law of profit remittances and the subservience of the current authorities, Brazil is far from being a stage of war, despite the weakness of its Armed Forces. In other words, the country has recently accepted all the impositions placed by international capital. In addition, Brazil is not on the border of world powers and it is not part of any valuable market route. The Pre-Salt was discovered here, but slavishly the country is delivering a substantial part of its oil, without a great return to society. In other words, the Brazilian lives in one of the capital dominated countries.

The exacerbated capitalism represents an exclusion model, but damages of this kind may be mitigated with strong regulation of the State, what is only possible if the country is sovereign. On the other hand, based on the recent experiences of the human species, in a short horizon, capitalism is the only applicable system of economic organization.

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